

REMARKS

Claims 1-60 are pending in the present application. Claims 1-56 stand rejected. Claims 57-60 are subject to restriction. Applicants have amended the claims to clarify the invention. Although the claims amendments should obviate any outstanding rejections, applicants include responses to the examiner's statements and argument in support of the patentability of the present invention over the prior art.

Interview with the Examiner

Applicants and their Attorney thank the Examiner for his time in conducting a personal / phone interview on 27 August 2007. The interview focused on all claims generally and specifically claims 1, 5 and 28. The discussion further centered on the intrinsic and extrinsic attributes of transactions. Applicants indicated that it would amend the claims to include intrinsic and extrinsic attributes.

Election/Restriction

Applicants request reconsideration of the restriction requirement. The Examiner states that additional claims 57-60 are directed to an independent invention, because they add the limitation "creating a buyer's specification of at least one market protocol," which was not presented in the original set of claims. Applicants traverse the restriction. In claim 1, we describe: (a) creating a buyer's abstract representation of at least one attribute of a request, and the relationship between at least one utility of the request and at least one state of the at least one attribute;

The limitation of "specification of at least one market protocol" is a special version of an abstract representation of a request, in which the market mechanism is the attribute of interest. Thus, since the new claims should be considered and examined together with claims 1-56. No additional searching in a separate class should be necessary. Therefore, applicant respectfully requests that the restriction be withdrawn. Applicants have also added material to the independent claims to clarify the use of intrinsic and extrinsic attributes. The specification of at least one market protocol is a special case of at least one state of an extrinsic attribute.

On OA P. 2, the examiner distinguishes between 57. *“A method for automatically providing a market”* and 1. *“computer implemented method for automatically finding the best matches between buyers’ requests and sellers’ offerings in a market.”* Merriam Webster’s Online Dictionary defines market (4.d) as *“the area of economic activity in which buyers and sellers come together and the forces of supply and demand affect prices.”* With respect to the current invention, the market created is precisely the composition of all assignments of *“buyers’ requests and sellers’ offerings”* within some area of commerce. We believe that this is consistent with current usage. Therefore, applicants believe that claims 57-60 should be examined at this stage of the prosecution.

On OA P. 3, the Examiner states that the phrase “schedule /a schedule” does not appear in claim 1. We have not argued that the language phrase “schedule /a schedule” appears in Claim 1. Nor does “schedule /a schedule” does not appear in the responses to the most recent office actions. The only remark we have made about schedules is w/r/t Shoham C5 L15-C6 L6 that a seller’s pricing is dictated by the seller’s *schedule*. The DME is distinguished from Shoham and other, similar approaches, in that it does not need a pre-defined schedule – rather it find the appropriate transactions and prices dynamically, given the current market participants and there preferences. Our argument w/r/t Shoham (and others) is that his system does not automatically find the best prices and assignments with respect to an unlimited number of arbitrary attributes.

In OA P. 4, regarding *“the buyer’s degree of satisfaction with states of those attributes”* the examiner states we argue a limitation that is not claimed.

Claim 1. “... (a) creating a buyers abstract representation of at least one attribute of a request, and the relationship between at least one utility of the request and at least one state of the at least one attribute;...”

Applicants have amended the claim to clarify that the “products or services are described by a plurality of arbitrary attributes” and “creating a buyers abstract representation of a plurality of intrinsic or extrinsic attributes of a request” and “creating a sellers abstract representation of a plurality of intrinsic or extrinsic attributes an offer”. This should make obvious that the

invention is distinguished in its treatment of multiple attributes, and its treatment of a variety of attributes (e.g. arbitrary, intrinsic or extrinsic) .

In OA P. 4, the examiner states that the present claims do not includes the features that Shoham lacks, such as a “committed protocol.” The preamble of Claim 1 reads: “A method ... *for communicating those matches, and for executing commitments.*” An agreement by market participants to abide by the transaction commitments of the invention constitutes a committed protocol.

In OA P. 6, the examiner states (regarding use of Ontologies) that we have recognized another advantage that would flow naturally from the suggestion of prior art. We argue that uses of ontologies as constructed within our architecture is non-obvious and that even today (many years after this claim was drafted) ontology systems running on monolithic processors (versus our distributed approach) are impractical for market matching.

In OA P. 6, the examiner states (regarding use of Ontologies) that we have recognized another advantage that would flow naturally from the suggestion of prior art.

Additionally, without the (DME Claim 1) steps of:

(a) creating a buyers abstract representation of at least one attribute of a request, and the relationship between at least one utility of the request and at least one state of the at least one attribute;

(b) creating a sellers abstract representation of at least one attribute of an offer, and the relationship between the total price of the offering and at least one state of the at least one attribute;

Existing approaches, such as (examiners words) “*object-oriented design, abstract, creating object, encapsulation, and overloading functions*” would not be sufficient to support ontology based matching of buyer & seller representations. The critical element here is that the representation is sufficient to faithfully portray the buyers’ utility and sellers’ price; while being universal enough to support inference of equivalence. Domain Ontologies are much more powerful in their representational power than general object-oriented approaches, and are similar (in power) to AI Knowledge-based inference systems, but are aimed at general domain relation meta-data, rather than inference to accomplish a specific task.

In OA P. 6, the examiner states that claims 57-60 introduces a new limitation – of “*creating a buyers’ specification for at least one market protocol*” which requires search in a separate class. However, use of market protocols are mentioned in the original claims, for instance:

5. (original) *A method of claim 2 wherein the at least one attribute includes both intrinsic qualities of the object of the request or offer, and extrinsic qualities of the transaction or market protocols, wherein the extrinsic attributes comprise commitment protocols and time qualifications.*

22. (original) *A method of claim 10 further comprising invoking auction protocols when there is at least two requests per one offer or at least two offers per one request.*

In OA P. 7 – The examiner states that Shoham discloses “*creating a buyers’ abstract representation of at least one attribute of a request.*” Shoham’s representation cannot be used for composition of a plurality of arbitrary attributes, or for combinations of intrinsic or extrinsic attributes. These distinguishing features are more clearly stated in the amended claims.

In OA P. 9 – The examiner states that it would be obvious to a person having ordinary skill in the art to combine the disclosures of Shoham and Lupien to construct the artificial negotiating entity.

What about the DME’s approach of using an agent-based system to localize authority and interest of the entity, and to construct consortia optimally with respect to expected utility, we aver that this is not an obvious construction, and the academic literature has only recently seen efforts in this direction (seven years after the initial DME application).

In OA P. 9-10 – The examiner states that Shoham and Lupien taken together support representation of both intrinsic and extrinsic qualities of a trading object. The extrinsic qualities are not qualities of the object – they are qualities of the market and the transaction. Both Shoham and Lupien “hard-wire” those qualities into their approaches – so they cannot be changed later in response to the utility of attributes specified by a buyer or seller.

In OA P. 10 – The examiner states that Shoham discloses “*using buyers consortiums rather than individual buyers*” – and provides the OBCS and SellCo as examples. Unlike the

consortia of the DME, Shoham's clubs are not assembled automatically to optimize the expected utility of transactions conducted by said consortia.

In OA P. 11-12 – The examiner states that Shoham, taken with Conklin discloses

“(c) constructing an artificial negotiating entity that will represent at least one consortium, and can conceal the identities of the buyers in the consortium.”

However, Conklin's system is an iterative, Human-in-the-loop approach – for making offers and counter-offers (see, e.g. The abstract) The system provides data, and search engines, but does not automatically construct the consortia – this is done by the human participants – who explicitly join one community or another – this is not performed automatically. Additionally, Conklin (in C18, L 7-25) makes obvious that this is a human-mediated negotiation, not an automatic one. And makes clear in C18, L3-64 that sponsored communities are explicitly identified and joined by participants. The DME constructs such communities automatically, to satisfy the explicit utilities represented with respect to product attribute states – no human intervention or permanent identifiable communities are necessary.

Though it has been stated that “simply automating” a manual operation does not render an invention patent-worthy, applicants hold that the invention can consider a quantity and diversity of product and service attributes that is impractical for typical human use. Additionally, because offers may last only briefly in the market place, manual human development of consortia would result in missed opportunities, and thus, poorer matches of the buyers' requests to sellers' offers. Therefore, using a computerized representation of the requests and offerings, and quickly evaluating the criteria for matches, provides a valuable service to the general user that would not exist if he had to manually (mentally) consider all states of all attributes, both for his own requests, and for requests of potential consortia partners, and in the light of ever-changing information about the available offers from sellers and sellers' consortia.

Buyers cannot simply “look for all possible matches for offers (or for fellow consortia members) in a catalog, because the size of the catalog would be too large to effectively search (even online) and because pages of the catalog would change during the lifetime of the search.

In OA P. 13 – The examiner states that together the disclosures by Shoham Lupien and Conklin inform the DME’s method of finding the assignments that best satisfy the user’s utilities. However – the combined disclosures fail to describe the non-linear, discrete general optimization model that must be solved to find such a satisfying assignment.

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CONCLUSION

Based on the Remarks above, Applicant respectfully requests allowance of all pending claims.

Respectfully submitted,
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